

Serial No.: 09/367,423

LISTING OF CLAIMS

1-102. (Canceled)

103. (Currently amended) The display of claim ~~106~~ 138, said separator defining an inherent mask between respective picture elements.

104. (Canceled)

105. (Previously presented) A liquid crystal display for a Schlieren projection display system, comprising:

plural liquid crystal picture elements selectively operable to affect light by scattering or absorbing light or by reducing such scattering or absorption of light;

a separator integral with and between respective picture elements, said separator being substantially non-selectively operable to affect light, and defines an inherent mask of lateral spacers between respective picture elements thereby forming a grid of spacers and picture elements; and

plural electrodes in spaced relation for selectively applying electrical input to respective picture elements; wherein:

said liquid crystal picture elements comprising liquid crystal and a medium that are cooperative for selective operation to scatter light for projection or to reduce such scattering or absorption, and

said inherent mask transmits light between respective picture elements without substantial scattering.

106-113. (Canceled)

114. (Previously presented) A liquid crystal display system, comprising a substrate having plural electrodes in spaced apart relation,

Serial No.: 09/367,423

plural volumes of liquid crystal in a medium, said volumes of liquid crystal arranged in overlying relation to respective electrodes, said volumes of liquid crystal being selectively operable to scatter light or to transmit light without substantial scattering,

a mask between respective groups of volumes of liquid crystal, said mask being in overlying relation to said substrate and between respective electrodes such that the mask covers said substrate at least substantially up to a lateral boundary of each electrode.

115. (Previously presented) The system of claim 114, said mask being substantially transparent.

116. (Previously presented) The system of claim 114, said mask being substantially non-scattering, said volumes being operative to scatter light in the absence of a prescribed input, and said volumes being operative to reduce scattering in response to a prescribed input.

117. (Previously presented) The system of claim 114, wherein said liquid crystal comprises liquid crystal material having a birefringence of about 0.12 or less.

118. (Previously presented) The system of claim 114, wherein said liquid crystal display includes a medium having plural volumes containing the liquid crystal material, an angle of the light scattering being a function of the size of the volumes, and wherein the size of the volumes is about 5 microns or less.

119. (Previously presented) The system of claim 114, wherein said liquid crystal comprises liquid crystal material having a birefringence between about 0.04 to about 0.08.

Serial No.: 09/367,423

120. (Previously presented) The system of claim 114, wherein the volumes of liquid crystal comprise liquid crystal material of relatively low birefringence in a medium that has surfaces to cause scattering of light in the absence of a prescribed input and reduces scattering in response to the prescribed input, wherein the surfaces interact with the liquid crystal material to cause scattering of light, and wherein the surfaces interact with the liquid crystal material to cause scattering of light due to a difference between the extraordinary index of refraction of the liquid crystal material and the index of refraction of the material of the surfaces.

121. (Previously presented) The system of claim 114, wherein the ordinary index of refraction of the liquid crystal is substantially matched to the index of refraction of the medium, and wherein the liquid crystal has positive dielectric anisotropy.

122. (Previously presented) The system of claim 114, wherein the liquid crystal is operationally nematic, operationally smectic or cholesteric.

123-125. (Canceled)

126. (Currently amended) A liquid crystal display, comprising:
plural liquid crystal picture elements selectively operable to affect light by
scattering or absorbing light or by reducing such scattering or absorption of light;
a separator integral with and between respective picture elements, said
separator being substantially non-selectively operable to affect light, and said separator
comprising lateral spacers between respective picture elements thereby forming a grid
of spacers and picture elements; and
plural electrodes in spaced relation for selectively applying electrical input to
respective picture elements; wherein
said spacers spacer means being located in relation to the space
between respective electrodes; and

Serial No.: 09/367,423

~~The display of claim 106, wherein electrical components for driving the electrodes are at least partly vertically aligned with the space between adjacent picture elements, and said separator overlying the portions of the electrical components that are vertically aligned in the space to optically mask the portions of the electrical components that are vertically aligned with the space.~~

127-132. (Canceled)

133. (Previously presented) The liquid crystal display for a Schlieren projection display system of claim 105, wherein the integral separator is comprised of the medium of the liquid picture elements.

134. (Previously presented) The liquid crystal display for a Schlieren projection display system of claim 105, wherein the integral separator is laterally in direct contact with the electrodes.

135. (Previously presented) The liquid crystal display for a Schlieren projection display system of claim 105, wherein the spacers of the separator cover a substrate of the liquid crystal display at least substantially up to a lateral boundary of each electrode.

136. (Previously presented) The liquid crystal display for a Schlieren projection display system of claim 105, wherein the inherent mask optically masks the space between respective electrodes by transmitting light without substantial scattering.

137. (Previously presented) The liquid crystal display for a Schlieren projection display system of claim 105, wherein electrical components for driving the electrodes are at least partly vertically aligned with the space between adjacent picture elements, and said separator overlying the portions of the electrical components that are vertically

Serial No.: 09/367,423

aligned in the space to optically mask the portions of the electrical components that are vertically aligned with the space.

138. (Currently amended) A liquid crystal display, comprising:
plural liquid crystal picture elements selectively operable to affect light by
scattering or absorbing light or by reducing such scattering or absorption of light;
a separator integral with and between respective picture elements, said
separator being substantially non-selectively operable to affect light, and said separator
comprising lateral spacers between respective picture elements thereby forming a grid
of spacers and picture elements; and
plural electrodes in spaced relation for selectively applying electrical input to
respective picture elements; wherein

said spacers spacer means being located in relation to the space
between respective electrodes; and

The liquid crystal display of claim 106, wherein the picture elements
comprise liquid crystal and a medium, and the integral separator is
comprised of the medium of the liquid picture elements.

139. (Currently amended) The liquid crystal display of claim ~~106~~ 138, wherein the integral separator is laterally in direct contact with the electrodes.

140. (Currently amended) A liquid crystal display, comprising:
plural liquid crystal picture elements selectively operable to affect light by
scattering or absorbing light or by reducing such scattering or absorption of light;
a separator integral with and between respective picture elements, said
separator being substantially non-selectively operable to affect light, and said separator
comprising lateral spacers between respective picture elements thereby forming a grid
of spacers and picture elements; and

Serial No.: 09/367,423

plural electrodes in spaced relation for selectively applying electrical input to respective picture elements; wherein

said spacers spacer means being located in relation to the space between respective electrodes; and

~~The liquid crystal display of claim 106, wherein the spacers of the separator cover a substrate of the liquid crystal display at least substantially up to a lateral boundary of each electrode.~~

141. (Currently amended) A liquid crystal display, comprising:
plural liquid crystal picture elements selectively operable to affect light by scattering or absorbing light or by reducing such scattering or absorption of light;
a separator integral with and between respective picture elements, said separator being substantially non-selectively operable to affect light, and said separator comprising lateral spacers between respective picture elements thereby forming a grid of spacers and picture elements; and

plural electrodes in spaced relation for selectively applying electrical input to respective picture elements; wherein

said spacers spacer means being located in relation to the space between respective electrodes; and

~~The liquid crystal display of claim 106, wherein the separator optically masks the space between respective electrodes by transmitting light without substantial scattering.~~

142. (Previously presented) The system of claim 114, wherein the mask is a separator comprised of the medium.

143. (Previously presented) The system of claim 114, wherein the mask is laterally in direct contact with the electrodes.

Serial No.: 09/367,423

144. (Previously presented) The system of claim 114, wherein electrical components for driving the electrodes are at least partly vertically aligned with a space between adjacent picture elements, and the mask overlying the portions of the electrical components that are vertically aligned in the space to optically mask the portions of the electrical components that are vertically aligned with the space.

145. (Canceled)

146. (Currently amended) A liquid crystal display, comprising:
a plurality of picture elements comprised of liquid crystal in a medium, each
picture element separated from adjacent picture elements by portions of the medium
that are substantially free of liquid crystal; and

a plurality of electrodes disposed with respect to the picture elements to
selectively apply electrical input to the picture elements;

~~The liquid crystal display of claim 145, wherein electrical components for driving the electrodes are at least partly vertically aligned with a space between adjacent picture elements, and the portions of the medium that are substantially free of liquid crystal overlying the portions of the electrical components that are vertically aligned in the space to optically mask the portions of the electrical components that are vertically aligned with the space.~~

147. (Currently amended) A liquid crystal display, comprising:
a plurality of picture elements comprised of liquid crystal in a medium, each
picture element separated from adjacent picture elements by portions of the medium
that are substantially free of liquid crystal; and

a plurality of electrodes disposed with respect to the picture elements to
selectively apply electrical input to the picture elements;

~~The liquid crystal display of claim 145, wherein the picture elements are operative to scatter light or transmit light by reducing scattering based on the electrical~~

Serial No.: 09/367,423

input, and the portions of the medium that are substantially free of liquid crystal are operative only to transmit light without substantial scattering.